

CASE STUDY

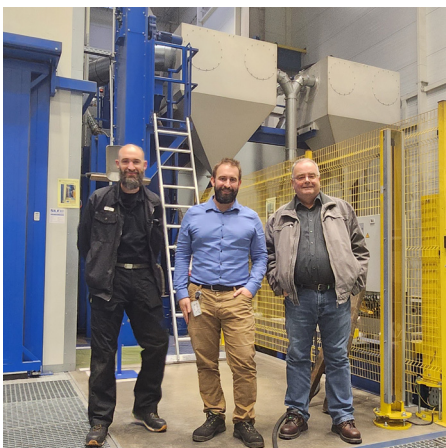
Amasteel Grit

Overview

F.X. Meiller Fahrzeug und Maschinenfabrik specialise in the manufacture of tipper bodies and hydraulic systems. In recent years, the company invested in a wheel blasting system and a GDP coating centre at its subsidiary plant in Slaný, Czech Republic. Following the company motto “Innovation future”, the plant aimed to reduce its carbon footprint, by increasing the corrosion resistance of the product surfaces, reduce volatile organic compounds (VOCs) during painting and reducing energy usage.

“We would have been satisfied with a 10% reduction in consumption. In the end, it was almost 50%.”

PETR ZBOŘIL, INDUSTRIAL ENGINEER FOR SURFACE TREATMENT AND PAINTING, MEILLER



Challenge

Part of the process change involved a switch to cleaning and painting individual parts before assembly with a target of reducing the cost of manually blasting the assembled product prior to painting. A wheel blasting system was purchased to blast the components, and Ervin was approached to advise on the selection of abrasive for the new blasting machine. High strength, but thin steel walls are used to reduce the weight of the tip-

per bodies. “We are talking about steel sheets just 1.5 mm thick over a length of 3-4 m” says Petr Zbořil, Industrial Engineer for Surface Treatment and Painting at Meiller. Blasting these thin sheets without deforming them, coupled with the low Rz and high R_{Pc} values required to maximise paint adhesion and corrosion protection and a need to minimize machine wear, creates a very demanding abrasive specification.

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Solution

To find the optimum abrasive, numerous series of tests with different blasting media from the Ervin product range were undertaken at the Ervin test Centre in Glaubitz, Saxony. The best results were achieved with the MG50 abrasive, a medium-hardness grit with a grain size of 0.300mm. MG50 delivered a good cleaning performance with low machine wear and was not too aggressive towards the thin steel sheets during the blasting operation. With the improved surface quality achieved, the KTL process could also be used on surfaces with low Rz values with good adhesion results, thus allowing for a reduction in the solvent content within the paint.

“Thanks to Ervin’s wide choice of different hardness for steel grit, it was possible to find a technical solution for ideal surface preparation results.”

PAUL ABRAM,
TECHNICAL DIRECTOR, ERVIN

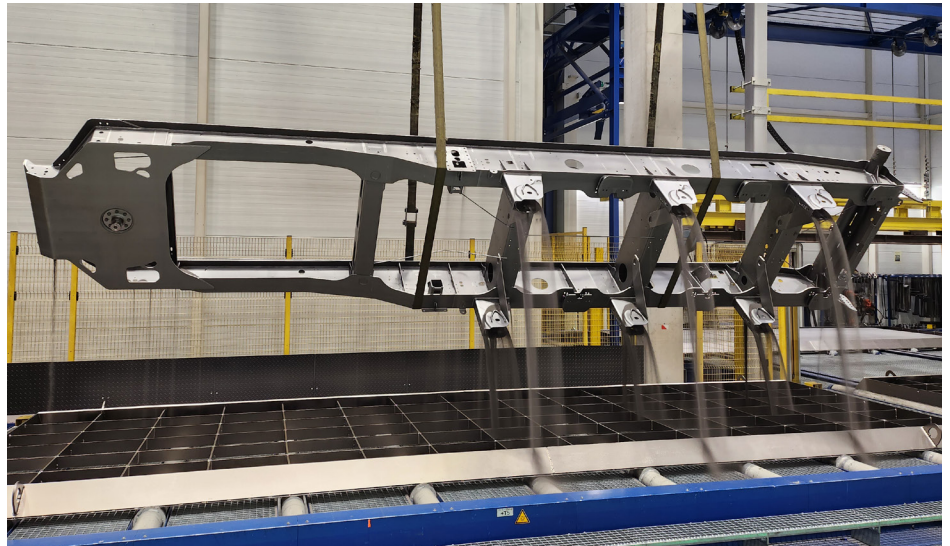
Result

On completion of the testing programme, Meiller also switched the abrasive used in the blast rooms from chilled iron to the Ervin high hardness steel grit HG50.

The use of the new abrasive resulted in a significant saving. “We would have been satisfied with a 10% reduction in consumption,” reports Zbořil.

“In the end, it was almost 50%, which corresponded to a total cost saving of over 30%.“

Meiler are now testing the use of Ervin’s Amapure mineral degreasing additive to further optimize the process by removing oil and grease through the blasting operation.



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